

REMARKS

35 U.S.C. § 102 Rejections

The Examiner has rejected claims 1-3, 5-8, and 22-25 under 35 U.S.C. § 102(a), as being anticipated by You.

Claim 1 has been amended to include forming a conductor on the dielectric after the removal of the photoresist without performing a wet clean first. Specifically, claim 1 includes the limitation "forming a metal part adjacent to the dielectric layer without a wet clean following removal of the photoresist layer."

Claim 25 has been amended to include flowing the reactive gas mixture through a plurality of openings in a baffle in the chamber with quartz surfaces. Specifically, claim 25 includes the limitation "the reactive gas mixture flowing through a plurality of openings in a baffle in the chamber, surfaces of the baffle exposed to the reactive gas mixture being made of quartz."

You does not disclose removing a photoresist layer from a dielectric layer and forming a metal part adjacent to the dielectric layer without a wet clean following removal of the photoresist layer or flowing the reactive gas mixture through a plurality of openings in a baffle in the chamber with quartz surfaces.

You discloses an integrated circuit and a method of removing photoresist. The process of You uses a low oxygen gas or non-oxygen gas plasma that removes the photoresist and provides a protective surface layer over a low-K dielectric material (Abstract). As shown in Figure 1 a silicon substrate 14 has low-K dielectric

layers 16 and 22 formed thereon and a metal layer 18 between the low-K dielectric layers. A photoresist layer 26 is formed on top of the upper low-K dielectric layer 22. After a pattern of channels 30 has been created in the photoresist layer 26, a via 32 is created through the upper low-K dielectric layer 22 (Column 4, lines 11-15). The rest of the photoresist layer 26 is then removed using a non-oxygen gas or trace oxygen forming gas plasma process that removes photoresist layer 26 without damaging metal layer 18 or low-K dielectric layer 22 (Column 4, lines 16-25). The plasma creates a protective layer on a surface of the low-K dielectric material 22. This protective layer provides a protective block such that photoresist removal solvents does not easily penetrate the protective layer and degrade the low-K dielectric layer 22 (Column 4, lines 50-59). After the photoresist has been removed using a low oxygen or oxygen less plasma process, the entire wafer is deposited in a solvent that removes any remaining photoresist from the wafer (Column 4, lines 66-67 through Column 5, line 1). The resulting device is depicted in Figure 4 having a via 32 extending through insulating layer 22 and being terminated at conductive metal layer 18, where a post contact may be deposited in a next process step. You is silent on the manner of delivering the plasma. You thus discloses a method of removing photoresist from a low-K dielectric layer including exposing the photoresist to a plasma that is substantially free of oxygen and removing the remaining photoresist using a solvent or a wet clean before a metal contact may be deposited. Specifically, You does not disclose forming a conductor adjacent to the dielectric layer after the removal of the photoresist without first performing a wet

clean of the device or flowing the reactive gas mixture through a plurality of openings in a baffle in the chamber with quartz surfaces.

Therefore, claims 1 and 25 are not anticipated by You because claims 1 and 25 include limitations not disclosed in You.

Claims 2, 3, 5-8, and 22-24 are dependent on claim 1 and should be allowable for the same reasons as claim 1.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 1-3, 5-8, and 22-25 under 35 U.S.C. § 102(a) as being anticipated by You.

35 U.S.C. § 103 Rejections

The Examiner has rejected claims 4, 9-11, and 13-20 under 35 U.S.C. § 103(a) as being unpatentable over You.

Claims 4, 9-11, and 13-20 are dependent on claim 1 and should be allowable for the same reasons as claim 1.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 4, 9-11, and 13-20 under 35 U.S.C. § 103(a) as being unpatentable over You.


Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Michael A. Bernadicou at (408) 720-8300.

Please charge any shortages and credit any overages to Deposit Account No. 02-2666. Any necessary extension of time for response not already requested is hereby requested. Please charge any corresponding fee to Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: September 30, 2003


Michael A. Bernadicou
Reg. No. 35,934

Patent Counsel
Legal Affairs Dept.
Applied Materials, Inc.
P. O. Box 450A
Santa Clara, CA 95052

Direct telephone calls to:
Michael A. Bernadicou
(408) 720-8300